# MARYLAND HISTORICAL TRUST

City: Zip Code: County: Carroll  USGS Quadrangle(s): Finksburg  Property Owner: Maryland State Highway Administration Tax Account ID Number:  Tax Map Parcel Number(s): Tax Map Number:  Project: MD 32 over Liberty Reservoir Remedial Repairs Agency: SHA  Agency Prepared By: Architectural Historian, MD SHA  Preparer's Name: Anne E. Bruder (C. Tuminaro URS 2004) Date Prepared: 05/20/2008  Documentation is presented in: Project Review and Compliance files  Preparer's Eligibility Recommendation: Eligibility recommended X Eligibility not recommend	no
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Preparer's Eligibility Recommendation: Eligibility recommended X Eligibility not recommend	
Circle VA D VC D Considerations A D C D D	led
Criteria: X A B X C D Considerations: A B C D E F	G
Complete if the property is a contributing or non-contributing resource to a NR district/property:	
Name of the District/Property:	
Inventory Number: Eligible: yes Listed: yes	
ite visit by MHT Staff yes X no Name: Date:	
The below assessment was created by URS Corporation and Hardlines Design as part of SHA's Phase II State Historic Bridge Context and Inventory of Modern Bridges and the original DOE was completed by Mr. Craig Tuminaro of the URS Corporation on September 10, 2004. However, based on a site visit in 2007 and the evidence of alterations, SHA has determined that the bridge is not eligible for inclusion in the NRHP as explained below.  URS Evaluation: Description  The MD 32 Bridge (MIHP # CARR-1673, Bridge 0604900) over the Liberty Reservoir in Carroll County is rare example of a truss bridge designed and constructed in the 1948-1960 period. It is one of only three truss bridges, and one of the only two de truss bridges to incorporate a Warren truss, built during this period. While the bridge has undergone some alterations to the roadeck and concrete abutments during a 1993-94 rehabilitation, it remains largely intact. It is also significant for its association with the Liberty Reservoir, an important public works project of the post-World War II period in Baltimore, and as an example of the work of J.E. Greiner Company, a prominent Baltimore engineering firm.	eck ad vith
MARYLAND HISTORICAL TRUST REVIEW  Eligibility recommended   Criteria: XA B X C D Considerations: A B C D E F  MHT Comments: Retains integrity in primary character-defining feature  The Jaclaum J 7/2/08  Reviewer, Office of Preservation Services  Bluste  Total PR	G (this

#### NR-ELIGIBILITY REVIEW FORM

CARR-1673

MD 32 over Liberty Reservoir, Bridge No. 0604900

Page 2

Determination of Eligibility

The MD 32 Bridge (MIHP # CARR-1673, Bridge 0604900) over the Liberty Reservoir is eligible for listing in the National Register under Criterion A on the local level with a period of significance of 1941-56 for its association with the Liberty Dam and Reservoir, an important public works projects for the City of Baltimore. The Liberty Reservoir was the result of a joint public-private campaign between City officials and the Citizens' Planning and Housing Association (CPHA), a citizens group formed in 1941 with the aim of improving housing and health conditions throughout the City.

The MD 32 Bridge is not National Register-eligible under Criterion B, as it is not associated with an individual significant on the local, state, or national level.

The MD 32 Bridge is National Register-eligible under Criterion C on the local level with a period of significance of 1952. Although the MD 32 Bridge has undergone some alterations to the road deck and concrete abutments during a 1993-1994 rehabilitation, the bridge retains its integrity of location, design, setting, association, materials, and feeling. Replacement of its original railings and parapets has adversely impacted the bridge's integrity of workmanship. It is a rare example of a truss bridge designed and constructed in the 1948-1960 period. It is one of only three truss bridges, and one of only two deck truss bridges to incorporate a Warren truss, built in Maryland during this period. It is additionally significant as an example of the work of J.E. Greiner Company, a prominent Baltimore engineering firm that designed numerous bridges throughout Maryland during the twentieth century.

National Register-eligibility under Criterion D was not investigated as part of this study.

#### SHA Evalution:

SHA Architectural Historian Anne E. Bruder made a field visit to the subject bridge on August 15, 2007. At the time, she noted the altered parapet, which is now a jersey barrier. Based on additional research conducted as part of the current SHA Project No. 2380206-B04900, additional alterations were identified. To wit: the bridge was designed by the John Greiner Engineering Company in 1949 and constructed as part of the Liberty Reservoir construction in 1952. The original parapets were low concrete walls topped by two metal pipes held in place by curved brackets. These extended the railing beyond the parapet wall and probably aligned with the safety curb on the highway below. In 1979, concrete end posts were added to the ends of the bridge in order to protect the parapets. Finally, in 1993 and 1994, SHA completed the new deck and the original parapets and safety curbs were replaced by raking jersey barriers, each topped by two metal railings. The new design allowed for wider travel lanes on the bridge. Although the Warren truss continues to function as designed, the loss of the original deck and parapets has compromised the bridge's integrity of materials, workmanship, design, association and feeling. As a result, despite its association with the Liberty Reservoir construction and the John Greiner Engineering Company, SHA Bridge No. 0604900 no longer retains integrity and does not demonstrate its association with either the reservoir's construction or the Greiner Company. Thus, SHA has determined that the bridge is not eligible for inclusion in the NRHP under Criteria A or C. The consultant did not identify persons of local, state, or national significance, and SHA Bridge No. 0604900 is not eligible for the NRHP under Criterion B, while Criterion D was not investigated.

Eligibility re	ecommen	ded		Eli	gibility not recommend	led						
Criteria:	A ments:	В	C	D	Considerations:	A	В	C	D	E	F	G
	Reviewe	er, Offic	e of Pre	servatio	on Services		X 1 - 2 1 - 2 V - 2 - 2 V	Date	w solino			

CARR-1673 MD 32 over the Liberty Reservoir Louisville vic. 1952

Bridge No. 0604900, built in 1952, runs northwest-southeast and carries the two lanes of MD 32 over Liberty Reservoir just south of Louisville. The bridge consists of two main Warren-type truss spans (about 216 feet in length) supporting the bridge deck, with smaller steel girder approach spans (about 70 feet in length) located on each end. The main truss spans consist of eight panels. The trusses, made from riveted steel, sit on a central reinforced concrete bent pier with two columns. The other piers are composed of two independent concrete pedestals spaced 20 feet apart on center. The truss spans sit on the central columns via steel rockers and have flat bottom chords. The outer ends of the truss spans are supported on small concrete foundations. The steel girder spans are supported on these concrete foundations on one end and reinforced concrete abutments on the outer end. The truss supports a concrete deck that has two traffic lanes and one emergency lane, totaling 36 feet with a four-foot overhang on each side. The deck also has a concrete parapet that also features a standard metal guardrail.

The MD 32 Bridge (MIHP # CARR-1673, Bridge 0604900) over the Liberty Reservoir in Carroll County is a rare example of a truss bridge designed and constructed in the 1948-1960 period. It is one of only three truss bridges, and one of the only two deck truss bridges to incorporate a Warren truss, built during this period. While the bridge has undergone some alterations to the road deck and concrete abutments during a 1993-94 rehabilitation, it remains largely intact. It is also significant for its association with the Liberty Reservoir, an important public works project of the post-World War II period in Baltimore, and as an example of the work of J.E. Greiner Company, a prominent Baltimore engineering firm.

# Maryland Historical Trust Maryland Inventory of Historic Properties Form

1. Name of I	Property	(indicate preferred	i name)		
historic	MD 32 Bridge	over Liberty Reservoir			
other	Bridge No. 060	4900			
2. Location					
street and number	MD 32 at Liber	ty Reservoir		<u> 1</u>	N/A not for publication
city, town	Finksburg			1	V/A vicinity
county	Carroll				-
3. Owner of	Property	(give names and mailing	ng addresses of all owne	rs)	
name	Maryland State	Highway Administration			
street and number	707 N. Calvert	Street		telephone	410-545-0300
city, town	Baltimore		state MD	zip code	21202
4. Location		escription	libe	er folio	
courthouse registr	v of deeds etc		libe	er folio	
city, town		tax map	tax parcel	tax II	) number
Contri Deteri Deteri Recor Histor	ibuting Resource in mined Eligible for mined Ineligible for ded by HABS/HA ic Structure Repo	rt or Research Report at MI	land Register ryland Register		
Category	Ownership	Current Function		Resource	Count
districtbuilding(s) _xstructuresiteobject	xpublic private both	agriculture commerce/trade defense domestic education funerary government health care industry	landscape recreation/cultur religion social x transportation work in progress unknown vacant/not in use other:	Contribution  I  Number of	g Noncontributing buildings sites structures objects Total  Contributing Resources listed in the Inventory

7.	Descri	ption	
	Descri	ption	

#### Condition

x_ excellent	deteriorated
good	ruins
fair	altered

Prepare both a one paragraph summary and a comprehensive description of the resource and its various elements as it exists today.

The MD 32 Bridge (MIHP # CARR-1673, Bridge 0604900) over the Liberty Reservoir, built in 1952, runs northwest-southeast and carries the two lanes of MD 32 over Liberty Reservoir just south of Louisville. The terrain immediately surrounding the bridge is hilly and covered with trees and other vegetation. The Liberty Reservoir expands into several fingers east and west of the bridge.

The bridge consists of two Warren truss spans approximately 216 feet in length supporting the bridge deck, with smaller steel girder approach spans approximately 70 feet in length located on each end. The main truss spans consist of eight panels. The trusses sit on a central reinforced concrete bent pier with two columns. The other piers are composed of two independent concrete piers placed 20 feet apart on center.

The trusses are riveted steel with the main members wide flange sections and the bracing members either wide flanges or angles. They are 27 feet from the center of the top chord to the center of the bottom chord. Floorbeams located at each truss joint are spaced at 27 feet, and are wide flange members. The trusses are spaced laterally at 20 feet center to center, and the floorbeams overhang the trusses on each side by five feet. The five lines of stringers framed into the floorbeams are wide flange members spaced seven feet apart.

The truss spans sit on the central columns via steel rockers and have flat bottom chords. The outer ends of the truss spans are supported on small concrete foundations. The steel girder spans are supported on these concrete foundations on one end and reinforced concrete abutments on the outer end. The truss supports a concrete deck that has two traffic lanes and one emergency lane, totaling 36 feet with a four-foot overhang on each side. The deck also has a concrete parapet that also features a standard metal guardrail. The parapet and handrail dates from a 1993-1994 rehabilitation of the bridge and is stamped with the date 1993.

8. Signification	ance			Inventory No. CARR-1673
Period	Areas of Significance	Check and j	ustify below	
1600-1699 1700-1799 1800-1899 <u>x</u> 1900-1999 2000-	agriculture archeology architecture art commerce communications community planning conservation	economics education x engineering entertainment/     recreation ethnic heritage exploration/     settlement	health/medicine industry invention landscape archit law literature maritime history military	philosophy politics/government tecture religion science social history
Specific dates	1952; 1993-1994 reh	abilitation	Architect/Builder	J.E. Greiner Company
Construction da	ites 1952			
Evaluation for:	National Register		/laryland Register	not evaluated

Prepare a one-paragraph summary statement of significance addressing applicable criteria, followed by a narrative discussion of the history of the resource and its context. (For compliance projects, complete evaluation on a DOE Form – see manual.)

#### Statement of Significance

The MD 32 Bridge (MIHP # CARR-1673, Bridge 0604900) over the Liberty Reservoir in Carroll County is a rare example of a truss bridge designed and constructed in the 1948-1960 period. It is one of only three truss bridges, and one of the only two deck truss bridges to incorporate a Warren truss, built during this period. While the bridge has undergone some alterations to the road deck and concrete abutments during a 1993-94 rehabilitation, it remains largely intact. It is also significant for its association with the Liberty Reservoir, an important public works project of the post-World War II period in Baltimore, and as an example of the work of J.E. Greiner Company, a prominent Baltimore engineering firm.

#### History and Support

The MD 32 Bridge was constructed in 1952 as part of work associated with the construction of the Liberty Reservoir and Dam project which was fully completed by 1956. The construction of the Liberty Reservoir, built over the Pataspsco River in southeastern Carroll County, was an integral part of the upgrades that Baltimore City officials made to the city's utilities and infrastructure to meet the demand for improved housing conditions city-wide.

The 1940 census indicated that Baltimore had more housing in poor condition that any other American city. Much of the downtown housing was overcrowded, did not have indoor plumbing, and suffered from rodent infestation. Baltimore also had the highest rate of tuberculosis among other similarly sized cities. A group of interested citizens in Baltimore formed together to create the Citizens' Planning and Housing Association (CPHA) to address these issues and housing standards generally throughout the City. The housing codes the citizen-based CPHA created served as the basis for the reformed housing standards the City adopted in 1941. The standards were to be enforced by City departments such as fire, police, public works and health.

The strategy employed by the CHPA and the City—that of a joint venture between citizens and government officials became known as the Baltimore Plan. The Baltimore Plan was a model that other cities have since followed in addressing their own housing concerns. During the 1940's, the new housing codes were vigorously enforced throughout the city while at the same time the Baltimore City government worked to demolish slums and provide new low-cost housing for the residents. To that end, Baltimore also created a housing court in 1947, the first such one in the United States, which focused specifically on housing code violations.

Providing a clean, pure water supply was vital to address many of the housing and health code issues identified by City officials and the CHPA. The construction of a new reservoir answered that need. Baltimore Mayor Theodore McKeldin initiated the important public works project during his term between 1943 and 1947. McKeldin supported the housing reforms made previously by CHPA and continued their and the City's work with housing code enforcement. At the time, Baltimore had two reservoirs that supplied water to the City: Loch Raven Reservoir, built in 1912, and Prettyboy Reservoir, built in 1936. The Liberty Reservoir, built over the

<sup>&</sup>lt;sup>1</sup> Robert J. Brugger, Maryland: A Middle Temperament 1634-1980 (Baltimore: The Johns Hopkins University Press, 1988) 557.

## Maryland Historical Trust Maryland Inventory of Historic Properties Form

Name Bridge No. 0604900, MD 32 Bridge over Liberty Reservoir Continuation Sheet

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Patapsco River and its tributaries in southeastern Carroll County and southwestern Baltimore County, and its associated dam were completed in 1956 and covered a 3,100-acre area. The reservoir contains 43 billion gallons of water and, along with the other two reservoirs, continues to serve the City of Baltimore and its 1.8 million residents.<sup>2</sup>

#### Design and Construction

Designed and built in 1951-52, the bridge uses two 216' Warren trusses with vertical members that support the main spans as well as two 70' steel girder approach spans for a total, continuous span of 572 feet over the Liberty Reservoir. It is constructed of riveted steel beams and is topped with steel beams that support the concrete and asphalt road deck. The bridge is located in a wooded area; MD 32 runs north-south through the 9,200-acre reservoir and associated surroundings.

Maps of the area from before and after the reservoir's construction indicate that the Liberty Reservoir eliminated at least six small bridges in the immediate vicinity of MD 32, also known as the Eldersburg-Louisville Road, that crossed Morgan Run and Middle Run, two streams that flowed into the Patapsco River, in southeastern Carroll County.<sup>3</sup> The construction of the reservoir also necessitated that the existing bridge that carried MD 32 over Morgan Run be reconstructed at a higher elevation and be large enough to handle a higher volume of traffic, as the bridge was to be the only major north-south highway to cross over the reservoir. The number of cars on almost all state and federal roads had increased dramatically since the 1910's in accordance with changes in the economy which allowed more people to own more cars. Similarly, the size and weight of vehicles had increased since many of the roads were first constructed. As a result, the roadway was relocated to the south to an area where the topography would allow for a new bridge built at a higher elevation.<sup>4</sup>

According to State Highway Administration records, the MD 32 Bridge was built following designs provided by the American Association of State Highway Officials (AASHO) in 1949 with J. E. Greiner Company, a prominent Baltimore engineering firm, acting as the consulting engineer. J. E. Greiner Company was an obvious choice as the consulting engineer. The company was established by John Greiner who had worked as the Assistant Chief Engineer for the B&O Railroad before leaving to open his own firm. His company had worked extensively with the State Roads Commission since 1916 when Greiner built a concrete arch double leaf bascule bridge. The association with the SRC continued throughout the twentieth century when J. E. Greiner Company was involved with a number of bridge projects, both big and small. In addition to engineering and construction of bridges, J.E. Greiner Company also was contracted by the SHA in 1938 to create a series of recommendations on the development of Maryland's roadways and bridges, ones that would address the needs and future of Maryland's surface transportation system. The resulting report, Maryland's Primary Bridge Program recommended the construction of four major bridge projects crossing the Potomac, Patapsco and Susquehanna Rivers and the Chesapeake Bay, all of which were eventually constructed by the J.E. Greiner Company. In addition to these, J.E. Greiner continued to be involved with many other smaller bridge projects, such as this example.

The MD 32 Bridge is a deck truss that uses a Warren truss with verticals. The deck truss represents one of three truss bridge types. In a deck truss, the vehicular or pedestrian traffic travels on the deck which is supported from beneath by the truss whereas in a through truss, the deck is placed essentially inside of the truss, on top of the bottom chords, and the sides are connected above through lateral

<sup>3</sup> General Highway Map of Carroll County, (1937) and General Highway Map, Carroll County, (1964).

<sup>&</sup>lt;sup>2</sup> Bureau of Water and Wastewater Fact Sheet, Oct. 30, 2002, City of Baltimore Department of Public Works < http://www.ci.baltimore.md.us/government/dpw/wwwfacts.html>.

<sup>&</sup>lt;sup>4</sup> J. E. Greiner Company, *General Plan and Elevation*, (Baltimore: City of Baltimore Department of Public Works Bureau of Water Supply, Eldersburg – Louisville Road Bridge Over Morgan Run Patapsco Development 1951).

<sup>&</sup>lt;sup>5</sup> Charles A. Murphy and William A. Geschrei, *Inspection Report for Maryland Route 32 Bridge Over the Patapsco Reservoir* (1985) 1.

# Maryland Historical Trust Maryland Inventory of Historic Properties Form

Name Bridge No. 0604900, MD 32 Bridge over Liberty Reservoir Continuation Sheet

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bracing. In a pony truss, the deck is placed on top of the truss and the sides extend upward along the deck but are not connected above.

The Warren truss is a truss type that had been in use for over a century by the time this example was built. It was patented in 1848 by the English engineers James Warren and Willoughby Monzani and had been first used in railroad construction. It is characterized by a series of isosceles or equilateral triangles composed of first wood and later iron and steel members, where diagonal members extend between the horizontal top and bottom chords. Unlike other truss variations, such as the Pratt truss where the diagonals were always in tension, the diagonals in a Warren truss could be in tension or compression, depending on the location of the live load crossing the bridge. A common variation, seen in this example, is the introduction of vertical bracing members and internal cross bracing (especially in the deck truss design) which help to resist shearing and twisting.<sup>6</sup>

By 1905, changes in technology allowed for easier field construction of steel trusses which increased the popularity and use of the Warren truss. By the 1930s, deck trusses were becoming increasingly popular in their use among the other two truss types. In their work *Low Cost Roads and Bridges*, Victor Brown and Carleton Conner indicated that through trusses restricted vehicle height which proved to be problematic in older, shorter bridges as the height of trucks increased with changes in automobile technology. By the 1950's, through and pony trusses were falling out of favor because of "the desirability of unobstructed views of motorists crossing them."

However, truss bridges, no matter their form, were somewhat costly and time consuming to build, especially in comparison to other types of bridges that gained widespread use in the 1920s and on. These bridge types utilized reinforced concrete as well as steel girders, and often a combination of the two in types such as concrete encased metal rolled girder, concrete beam, and concrete box beam or girder. As early as the 1910s, the Maryland State Roads Commission began developing standardized designs for reinforced concrete bridges, an effort that continued and increased during the 1920s. <sup>10</sup> By the 1948 to 1960 period in Maryland, there was only

<sup>&</sup>lt;sup>6</sup> Ann B. Miller and Kenneth M. Clark, Survey of Metal Truss Bridges in Virginia (Charlottesville, VA: Virginia Transportation Research Council, 1997) 11.

<sup>&</sup>lt;sup>7</sup> Lichtenstein Consulting Engineers, Inc., *Delaware's Historic Bridges*, (Delaware Department of Transportation, 2000), 73-4.

<sup>&</sup>lt;sup>8</sup> Historic Highway Bridges in Maryland: 1630-1960, 77.

<sup>&</sup>lt;sup>9</sup> Engineering News Record, August 8, 1957, 42.

<sup>&</sup>lt;sup>10</sup> P.A.C Spero & Company and Louis Berger & Associates, Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report (Baltimore, MD: Maryland State Highway Administration, July 1995) 83.

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Name Bridge No. 0604900, MD 32 Bridge over Liberty Reservoir Continuation Sheet

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one through truss bridge and only two deck trusses built by the State Roads Commission while 444 metal rolled girder concrete encased bridges and twenty-eight concrete slab bridges were built during the same period.<sup>11</sup>

The early examples of reinforced concrete bridges were those that had very short spans. By the 1940s however, while very large, monumental bridges, like the Susquehanna River Bridge and the Chesapeake Bay Bridge, built from 1949-52 both of which were engineered by J. E. Greiner Company, continued to incorporate a variety of metal truss types, reinforced concrete and steel girders had largely become the type and material of choice for highway bridges. In addition to being easier to build, they were also easier to maintain over time. In neighboring Delaware, there was even a concentrated effort during the 1930s through 1960s to replace metal truss bridges with reinforced concrete and steel girder types. The trend was also reflected in Virginia where the use of steel trusses peaked in the 1920s and 1930s with a total of 124 metal truss bridges built, in comparison to the 1940 to 1960 period when only eighteen were built.

<sup>&</sup>lt;sup>11</sup> Maryland State Highway Administration, Bridges By Type and Year, 2003.

<sup>&</sup>lt;sup>12</sup> P.A.C Spero & Company and Louis Berger & Associates, 83.

<sup>&</sup>lt;sup>13</sup> Lichtenstein, 74.

<sup>&</sup>lt;sup>14</sup> Miller and Clark, 16.

### 9. Major Bibliographical References

Inventory No. CARR-1673

See Continuation Sheet

10. Geographical Data							
Acreage of surveyed property Acreage of historical setting							
Quadrangle name	Finksburg, MD	_ Quadrangle scale:	1:24,000				

Verbal boundary description and justification

MD 32 Bridge carries MD 32 over Liberty Reservoir in Carroll County. The bridge has been associated with this site since its construction.

11. Form Prepared by					
name/title	Craig Tuminaro / Roy Hampton and Amy Chase				
organization	URS Corporation / Hardlines Design Company	date	October 2004		
street & number	200 Orchard Ridge Drive / 4606 Indianola Avenue	telephone	301-258-5889/ 614-784-8773		
city or town	Gaithersburg / Columbus	state	MD/ OH		

The Maryland Inventory of Historic Properties was officially created by an Act of the Maryland Legislature to be found in the Annotated Code of Maryland, Article 41, Section 181 KA, 1974 supplement.

The survey and inventory are being prepared for information and record purposes only and do not constitute any infringement of individual property rights.

return to:

Maryland Historical Trust DHCD/DHCP 100 Community Place Crownsville, MD 21032-2023 410-514-7600

# Maryland Historical Trust Maryland Inventory of Historic Properties Form

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Engineering News Record, August 8, 1957.

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Miller, Ann B. and Kenneth M. Clark, Survey of Metal Truss Bridges in Virginia. Charlottesville, VA: Virginia Transportation Research Council, 1997.

Murphy, Charles A. and William A. Geschrei, Inspection Report for Maryland Route 32 Bridge Over the Patapsco Reservoir, 1985.

P.A.C Spero & Company and Louis Berger & Associates, *Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report.* Baltimore, MD: Maryland State Highway Administration, 1995.

#### Sources Consulted:

Maryland SHA Cultural Resource Library and Bridge Engineering Department, Baltimore - Reports published by or for the State Roads Commission, bridge files

Maryland Historical Trust Library, Crownsville - Inventory of Historic Places, National Register Nominations, Determinations of Eligibility, Cultural Resource Reports

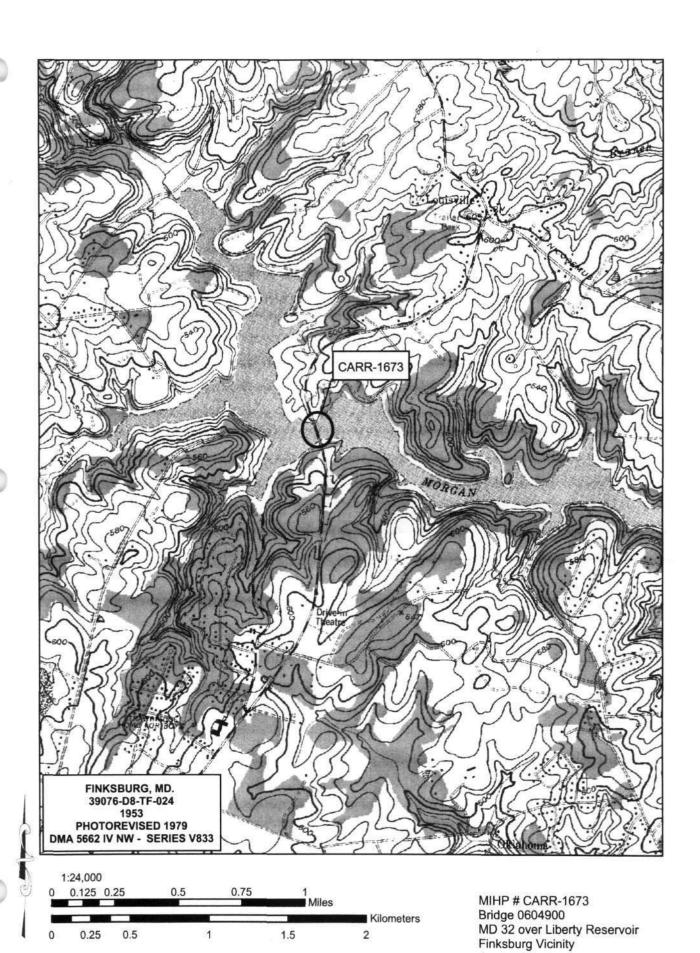
Maryland State Archives, Annapolis - photographs from the Sarikas Collection and materials published by the State Roads Commission

Enoch Pratt Library (Maryland Room), Baltimore - vertical files dealing with Maryland bridges

Library of Congress , Washington, DC - General information on bridges and additional Maryland bridge material

New Jersey State Library, Trenton - Engineering News-Record on microfilm

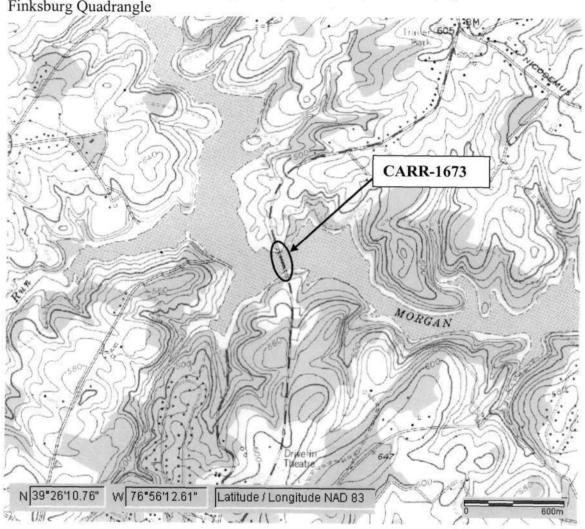
New York Public Library, (Science, Business, and Industry Library), New York - Additional SHA annual reports



Carroll County

Finksburg, MD. Quadrangle

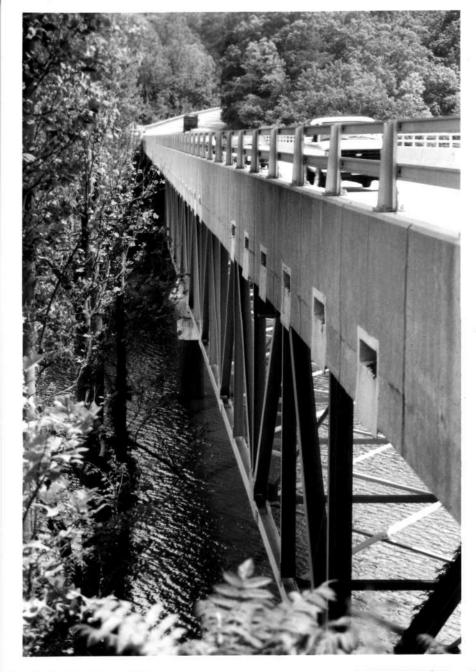
CARR-1673
Bridge 0604900, Sykesville Road (MD 32) over Liberty Reservoir, Sykesville Finksburg Quadrangle



1998 Aerial Photo
Ellicott 1906 15' quad



MIHP + CIFT . 673 Bridge # 0604900, MD 32 over liberty Reservoir Carroll County, Mo Photographer: Roy Harpen, Hardines Design Company Location of negative 120 54Po bridge due sing south



MIHP # [RRK-1873 Bridge # CE: 1990, MC 32 over Liberty Reservoir Carroll County, 1110 Photographer Ry Hampton, Hardlines Design Company 6/10/03 Location of regoive: NO SHPO Oblique view of cost E Evotion, society south. 2/8



MIHP # CRRC-1673 Bridge No. 0604900, MO 32 over Liberty Reservoir Carroll County, mo Photo grapher Roy Pompton Hardines Design Company 6/10/03 Location of regative: NO SHPO oblique yew of east elevation, looking south 3/8



MIHP# CARR-1673 Bridge # 0604900, mo 32 over Liberty Reservoir Carroll County, MD Photographer: Rou Harryon Hardines Design Company Location of negative: MO SHPO oblique view of cast exeration, looking north



MIHP # CARR-1673 Bridge # 0604900, MO 32 over Liberty Reservoir Carroll County, MD Photographe: Roy Hampton, Hardlines Design Company, 6/10/03 Location of pegative: mo SHPO oblique view of east exuation, looking north



MIHP # CARR-1673 Bridge # 1604900, MD 32 over Liberty Reservoir Carroll County, MD Photo grapher Roy Hampton, Hardlines Design Congran, 6/10/03 Location of Negatives! MO 5470 underside of bridge, looking north 618



MIHP # CARR- 1673 Bridge # 1604900, MD 32 over liberty Reservoir Carroll County, MO Photographer: Roy Hangton, Kardinas Design Company 6/10/03 Location of Negatives: MO SHPO underside of bridge, looking north



MIHP# CARR-1673 Bridge # 160400, MO 32 over Liberty Reservoir Carroll County, MO Photo graphes: Roy Hampton, Hardlines Design Company 6/10/03 Location of Negatives: MO SHPO detail it date at northwest corner